

NOV 09 2005

Atty. Dkt. No. 200205320-1

*IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

Applicant: Yraceburu et al.

Title: PRINT MODE FOR NARROW  
MARGIN PRINTING

Appl. No.: 10/701,231

Filing Date: 11/03/2003

Examiner: Goldberg

Art Unit: 8161

DECLARATION UNDER 37 C.F.R. 1.131Commissioner for Patents  
Washington, D.C. 20231

Sir:

We, Robert M. Yraceburu, Steve O. Rasmussen, and Mark S. Hickman, state and declare that:

1. Each of us are the inventors of at least one of originally filed Claims 1 through 15 of U.S. Patent Application Serial No. 10/701,231, filed on November 3, 2003 and entitled "PRINT MODE FOR NARROW MARGIN PRINTING."
2. We understand that in an Office Action dated August 23, 2005, each of originally filed Claims 1 through 15 were rejected as being unpatentable based on the use of U.S. Patent No. 6,869,176 to Saito.
3. We understand that this declaration is being filed with an amendment in which originally filed Claim 13 is cancelled and in which originally filed Claims 1-3, 6-8, and 11-13 are amended to replace "printzone" with "print zone".
4. We understand, based on the information provided on the front page of Saito, that Saito was filed in the United States on September 5, 2002.

Declaration  
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5. Prior to September 5, 2002, we conceived in the United States, the invention described in the originally filed and amended claims of the above-referenced application as evidenced by the attached Exhibit A.
6. We hereby declare that all statements made herein of our own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: Oct 21, 2005By: Robert M. Yraceburu  
Robert M. YraceburuDate: 24 OCT, 2005By: Steve O. Rasmussen  
Steve O. RasmussenDate: Oct 24, 2005By: Mark S. Hickman  
Mark S. HickmanDeclaration  
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# EXHIBIT A

	<b>Invention Disclosure</b> (WKRP Document Number 3G4P)	
	PD No.	Date Received by Legal

Managing Attorney Curtis Rose

The information contained in this document is HP CONFIDENTIAL and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

### General Information

Write a descriptive title of this invention.

Print Mode for Full Bleed Printing with Intermittent Print Zone Edge Guides

Write a brief abstract of the invention.

A Print Zone is rectangular in shape but with the two upstream corners notched out where intermittent edge guides are located to hold down curled media.

Select projects associated with this disclosure. Do not choose the project to which you are assigned if it does not relate to the disclosure.


galileo, Galileo, Galileo Program, Gx8 and polaris xx

Select product names associated with this disclosure. Do not choose the product to which you are assigned if it does not relate to the disclosure.

All HP Printers, All Inkjet products, All InkJet Products, all print mechs, DeskJet printers, Galileo, Godzilla, godzilla products, HP All-In-One Printer Systems, HP PhotoSmart, Image quality Printers, Industrial Printing, Inkjet Product Families, Phogenix photo mini-lab, Photo Mini Lab, PML Gen2, TIJ 4 Products and Wide-format printers

### Attachments

Do you have electronic document files to upload? Drawings and diagrams will significantly enhance your invention disclosure. Please do not attach duplicative material that you have already included in this disclosure.

 Intermittent\_Edge\_Guide\_Print\_Mode.doc - 12:23PM - Word document showing parceled print zones (Uploaded by Robert M Yraceburu)

### Inventor Information

Pursuant to my (our) employment agreement, I (we) submit this disclosure:

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00447970

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Exhibit A

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### Description of Invention

#### Explain the problems solved by the invention.

There are no print modes that are based on anything but rectangular printzones. In inkjet printing the printheads have a nozzle column height that scans back and forth to form a rectangle. If any hardware, e.g. edge guide, protrude into one of these rectangular areas, it will get printed on and disrupt the print image.

#### List prior solutions and their disadvantages.

Prior solutions have been to keep all hardware out of the rectangular area that is defined by the print head swath. This imposes limits on holding media flat in the print zone. As print zones increase in length (paper motion direction), issues with holding media flat with only hardware downstream or upstream of the printzone become ineffective.

#### Describe the construction and operation of the invention.

The invention removes parcel(s) from the standard rectangular print zone created by a print head swath. Of particular interest is to notch out rectangular corners at the leading edge of a rectangular print zone. The leading edge is the edge that the media comes into contact first. Such a print zone is shown in Figure 1 where B is the printable area and the A areas are keep out zones.

All printing (1, 2, 3... ..n pass) can utilize normal print modes as long as the image width is less than C and E in Figure 2.

All discussion hereafter refers to images that are wider than C and E. These are images with small margins or full bleed.

All one pass printing has to occur in area D, E, and F. No printing would be done in area C.

For multiple pass printing (greater than one pass), printing can be restricted to area D, E, and F only, or variant printmodes can be utilized.

For example, with two pass even advance printing, the first pass can apply 50% ink coverage for the width of C and E in the leading half of the print zone (down to the dashed line). The second pass would do the same for new media advanced into the printzone, and add the other 50% of ink to the area printed in the first swath now below the dashed line, plus add 100% ink to area D and F below

Exhibit A

the dashed line.

For nonuniform two pass printing (majette mode), printing probably would be restricted to area D, E, and F.

For three pass printing, area C, the top half of E, and the bottom half of E would get 33% ink coverage on the first, second, and third swaths respectively. The top half of area D and F, and the bottom of D and F would get 50% ink coverage in the second, and third swaths respectively. This three pass discussion assumes the height of E is twice that of C.

The same logic can be used for 4 pass or greater pass print modes. Divide the C + E area into even increments and apply the normal ink per swath in this area. To determine the amount of ink per swath in area D and F divide the number of full increments (line feeds) in area D and F into 100% ink coverage. For example, assume areas C and E 16mm and 32mm tall respectively. For 8 pass printing the increment (line feed) would be  $(16+32)/8 = 6\text{mm}$ . Each swath in area C and E would get 12.5% ink coverage. Five full increments occur in and D and F  $(32\text{mm})/(6\text{mm}/\text{increment}) = 5.2\text{increments}$ . Therefore, ink coverage per swath for areas D and F would be 20%.

A concern with the above approach is that a print defect will result and it will be set off by a distinct line between D and E and E and F. Therefore in Figure 3 transition zones G, I, K, and M are shown. To understand how the transition zones can be used, a 3 pass print mode will be described. Area H will get 33% of its ink on the first pass. Areas G and I will get a gradient of ink from 0% on their edges next to A, to 33% on their edges next to H. On the second and third passes, area L will get 33% coverage per swath, and areas J and N will get 50% coverage per swath. Areas K and M will get a gradient from 50% on their edges next to J and N, to 33% on their edges next L. This can be extrapolated other printmodes as well.

#### What are the advantages of this invention over what has been done before?

Advantages of this invention are:

Enables media controlling elements imposing upon the print zone.  
Low PPS with large print swaths.  
No loss of thruput on small margin/full bleed images on most print modes.  
Minimal to no print defects due to modified printzone shape.

#### Invention History

Was a description of the invention published externally, or are you planning to publish externally?  
If so, when and in what external publications?

No

When was this invention published externally?

Describe the details of the external publication of this invention

Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, when and where?

No

Exhibit A

This invention has been explained to and understood by the following two witnesses. Witnesses must be HP employees and not inventors of this invention disclosure.

Christopher M Lesniak	Hewlett-Packard Company DI - Digital Ptg Technology, Digital Imaging, Imaging and Printing Systems, Americas (5400-5622) chris_lesniak@hp.com	Vancouver  +1 (360) 212-3665
Jim Beehler	Hewlett-Packard Company DI - Digital Ptg Technology, Digital Imaging, Imaging and Printing Systems, Americas (5400-5622) jim_beehler@hp.com	Vancouver  +1 (360) 212-2379

### Additional Information

Enter one or more keywords which best characterize this disclosure. These keywords will help researchers find your disclosure after it is submitted.

print zone, print mode and media control

Was this Invention Disclosure prepared as a result of an Innovation Workshop? If you are not sure, select *No*.

No

Does this disclosure relate to a previously submitted disclosure? If so, please provide the PD number of the related disclosure and explain.

What is the PD Number of the disclosure this one is related to?

Explain how this disclosure is related to a previous one. If this disclosure is related to more than one previous disclosure, include extra PD numbers here.

Print modes that work with hardware described in

### Administrative Record

Date and time when this invention disclosure was submitted

Select the Legal Clerk who processed this invention disclosure.

Ann Lygas	Hewlett-Packard Company Intellectual Property, Corp Infrastructure, Infrastructure, Worldwide (0000-1622) ann_lygas@hp.com	San Diego  +1 (858) 655-4926
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Record the PD number assigned by Merlin to this invention disclosure.

Exhibit A

Figure 1

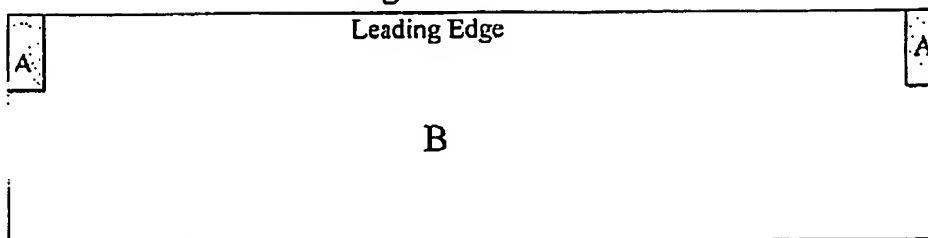


Figure 2

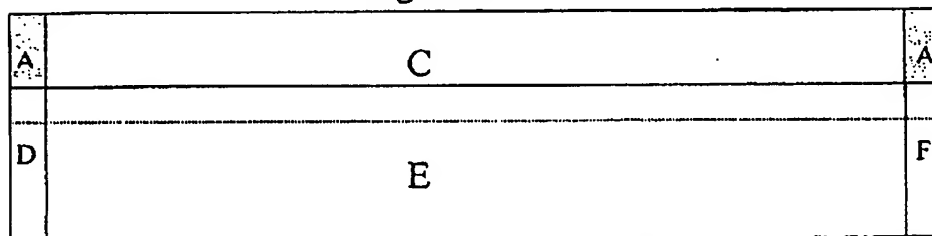


Figure 3

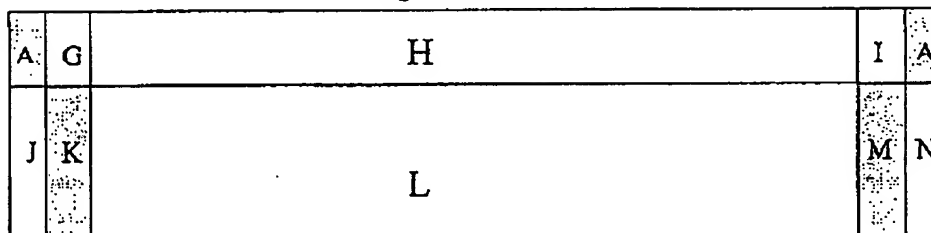


Exhibit A